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Flood Protection Structure Accreditation Task Force: Interim Report

January 2, 2013

FLOOD PROTECTION STRUCTURE ACCREDITATION TASK FORCE: INTERIM REPORT



FEMA



Message from the Administrator and the Assistant Secretary of the Army (Civil Works)

The Federal Emergency Management Agency (FEMA) and the United States Army Corps of Engineers (USACE) are pleased to present this report, titled "Flood Protection Structure Accreditation Task Force: Interim Report." This Interim Report was prepared jointly by our two agencies in response to the requirements of section 100226(d)(1) of Pub. L. 112-141, the Moving Ahead for Progress in the 21st Century Act (more commonly referred to as "MAP-21"), and serves as the interim report required by that section.

This Interim Report summarizes the ongoing efforts by the FEMA-USACE Task Force formed to develop recommendations to better align processes and information related to USACE levee inspections and assessments and the National Flood Insurance Program levee accreditation requirements.

As required by section 100226(d)(1), we are providing this Interim Report to the following congressional committees:

- Senate Committee on Banking, Housing and Urban Affairs;
- Senate Committee on Environment and Public Works;
- House Committee on Financial Services;
- House Committee on Natural Resources; and,
- House Committee on Transportation and Infrastructure.

Any inquiries related to this Interim Report may be directed to Ms. Jennifer Greer, Chief of USACE Future Directions Branch, at 202-761-4113.

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Administrator - Federal Emergency Management Agency

Date: January 4, 2013

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Assistant Secretary of the Army - Civil Works

Date: JAN -3 2013



Executive Summary

This report serves as the interim progress report required by Section 100226 of Public Law (P.L.) 112-141, the Moving Ahead for Progress in the 21st Century Act (MAP-21), enacted on July 6, 2012. Section 100226 requires the Federal Emergency Management Agency (FEMA) and the U.S. Army Corps of Engineers (USACE), in cooperation with the National Committee on Levee Safety to establish a “Flood Protection Structure Accreditation Task Force” (Task Force). The purpose of this Task Force is to develop a process to better align the information and data collected by and for USACE under the Inspection of Completed Works (ICW) Program with the flood protection structure accreditation requirements of the National Flood Insurance Program (NFIP) so that:

- Information and data collected for either purpose can be used interchangeably. (Task 1)
- Information and data collected by or for the USACE ICW program is sufficient to satisfy NFIP flood protection structure accreditation requirements. (Task 2)

The Flood Protection Structure Accreditation Task Force builds on the work of the FEMA-USACE Fiscal Year 2012 Task Force, which had a similar charge – to better align NFIP levee accreditation requirements with USACE levee inspections. Better alignment between USACE and FEMA levee-related activities will leverage federal resources, reduce redundancies, and increase progress towards achieving the mutual goal of ensuring that people have the information needed to make informed decisions about living or working behind levees.

The following describes the progress the Flood Protection Structure Accreditation Task Force has made towards addressing each of its two tasks.

TASK 1: *Information and data collected for either the USACE Inspection of Completed Works (ICW) program or National Flood Insurance Program (NFIP) levee accreditation process can be used interchangeably.*

To accomplish Task 1, the Task Force analyzed results of an information exchange survey conducted in May 2012 to gain a better understanding of the types of levee-related information collected and how this information is shared between FEMA Regional Offices and USACE District Offices. Overall, results show that information was regularly exchanged, but the types of information and when they were shared were inconsistent. In addition, neither agency has specific policies that outline how this shared information should be used.

Building on this initial analysis, the Task Force identified key products developed by USACE, FEMA, and levee sponsors and where these products are stored. Subsequent work by the Task Force will focus on the use of the National Levee Database as the main forum of data exchange and development of recommendations for specific policies and procedures to define what data are exchanged and at what frequency information is updated. Further, USACE and FEMA will clarify policies and procedures regarding which actions from one agency results in actions from the other.

FLOOD PROTECTION STRUCTURE ACCREDITATION TASK FORCE: INTERIM REPORT

TASK 2: *Information and data collected by or for the USACE ICW program is sufficient to satisfy NFIP flood protection structure accreditation requirements.*

The Task Force's initial step to address this task was to identify current USACE Levee Safety Program activities – a broader set of levee-related activities than the ICW program – and the specific NFIP levee accreditation requirements those activities would meet. The activities reviewed include USACE levee inspections (routine and periodic), screenings, and risk assessments. The result is that, within the current process, these activities can fulfill some NFIP accreditation requirements, but not all the requirements can be met.

In developing its final recommendations, the Task Force faces the following challenges in aligning USACE and FEMA processes for levee accreditation for the NFIP:

1. USACE Levee Safety Program activities examine and evaluate all levees within its program regardless of design level. NFIP levee accreditation requirements, on the other hand, focus solely on the 1% annual chance exceedance (ACE) event (100-year event). For example, in the case of a levee designed to the 0.2% ACE event (500-year), the USACE inspection would assess the levee to the 0.2% design level. USACE activities would not determine whether the levee would perform at the 1% ACE event, which is the analysis necessary to meet NFIP accreditation requirements.

2. Different programmatic timelines and review processes can affect ability of FEMA and USACE to fully utilize each other's data.
3. To retain a systems approach to levee analysis and risk management, complete NFIP levee accreditation packages must be submitted by one source, typically the requester of levee accreditation. However, levee maintenance responsibility and levee information may involve multiple sources.
4. A perception of liability related to the condition of an area's levees may result in communities, private sector companies, or professional engineers preferring to perform their own inspections and evaluations rather than using USACE-generated data and information.

Further, changes to administrative processes by each agency to achieve alignment (processes that do not require a change in authority) should still fulfill the purposes of each agency's activities, be beneficial to both USACE and FEMA, and be the most effective way to meet the Task Force's objectives with minimal impacts.

In developing the Final Report, due to Congress July 6, 2013, the Task Force will identify specific changes to process and policy and identify resource implications for narrowing the gap between USACE inspections, screenings, risk assessments, and potentially other activities for a NFIP accreditation package.



Table of Contents

Executive Summary	i
Task Force Overview	1
Charge from Congress	1
Task Force Objectives	1
Principles for Developing Recommendations	2
Building on Previous USACE and FEMA Collaborative Efforts	2
Background and Context	4
Overview of the National Flood Insurance Program and the USACE Levee Safety Program	4
Scope of the Task Force: Levees Under Consideration	6
The Challenges of Aligning USACE Levee Safety Program and the National Flood Insurance Program	8
Task 1: Develop recommendations so that information and data collected for either NFIP accreditation or the Inspection of Completed Works program can be used interchangeably	10
Possibilities for Improving Data Exchange and Risk Communication	10
Task 2: Develop recommendations so that information and data collected by or for the Inspection of Completed Works program is sufficient to satisfy NFIP accreditation requirements	12
Key USACE Activities That Contribute Data/Information/Analysis That May Inform NFIP Accreditation Decisions	12
Identifying the Gap: How do Current USACE Levee Safety Activities Align with NFIP Accreditation Requirements?	14
Analyzing the Gap: USACE Levee Safety Program Activities and NFIP Accreditation Requirements	15

Soliciting Stakeholder Feedback.....17

 Soliciting Stakeholder Comments from All Regions17

 Articulating Key Issues by Stakeholders Related to NFIP Accreditation17

 Role of the National Committee on Levee Safety in Task Force Efforts19

Conclusion and Next Steps 19

Appendix A: Legislative Language Establishing the Flood Protection Structure Accreditation Task Force..... 21

Appendix B: Sources of Stakeholder Input..... 22

Appendix C: Mapping of Areas Protected by Levee Systems (44 CFR 65.10) 24

Appendix D: Glossary 27

Appendix E: List of Acronyms Used..... 28

TASK FORCE OVERVIEW

Charge from Congress

Enacted on July 6, 2012, Section 100226 of P.L. 112-141, the Moving Ahead for Progress in the 21st Century Act (MAP-21) requires the Federal Emergency Management Agency (FEMA) and the U.S. Army Corps of Engineers (USACE) in cooperation with the National Committee on Levee Safety (NCLS) to establish a Flood Protection Structure Accreditation Task Force (Task Force). The purpose of this Task Force is to “develop a process to better align the information and data collected by or for the USACE under its Inspection of Completed Works (ICW) Program with the flood protection structure accreditation requirements” of the National Flood Insurance Program (NFIP) so that:

- Information and data collected for either the USACE ICW program or NFIP levee accreditation process can be used interchangeably.
- Information and data collected by or for the USACE ICW program is sufficient to satisfy NFIP flood protection structure accreditation requirements.

The legislation identified the following requirements for consideration in developing the process:

- Recommendations from “interested persons in each region” shall be gathered and considered.
- Changes to the ICW program and NFIP accreditation requirements shall be considered.
- The intent is not to lessen the level of public safety or flood risk reduction.

Congress specifically requested that the Task Force consider information and data collected through the USACE ICW program. In addition to the information and data

collected through the ICW program, the Task Force is evaluating the full suite of USACE Levee Safety Program activities in order to provide the maximum amount of relevant information and analysis to inform accreditation decisions.

Products of the Task Force are to be submitted to the Senate Committee on Banking, Housing, and Urban Affairs; Senate Committee on Environment and Public Works; House Committee on Financial Services; House Committee on Transportation and Infrastructure; and House Committee on Natural Resources. This interim report is due 180 days after enactment of the Act (January 2, 2013). A final report is due one year after enactment (July 6, 2013), and the Task Force will terminate after submission of this final report.

Task Force Objectives

The Task Force developed the following four objectives to guide its work.

OBJECTIVE #1: Identify current USACE or FEMA activities that can contribute information/data/analysis to inform NFIP accreditation decisions.

OBJECTIVE #2: Determine areas of direct alignment and gaps between the information/data/analysis collected by USACE and those required for NFIP accreditation decisions.

OBJECTIVE #3: Determine options for bridging identified gaps between the information/data/analysis collected by USACE and those required for NFIP accreditation decisions.

OBJECTIVE #4: Identify any areas of duplication of federal effort related to evaluating a levee for the USACE ICW program or reviewing levee data for the NFIP.

To date, the Task Force has focused on Objectives 1 and 2 – identifying the current activities that can contribute information, data, and analysis to inform NFIP accreditation decisions and identifying the areas of direct alignment and gaps between the available data. This interim report describes the Task Force’s progress in these areas.

Principles for Developing Recommendations

The Task Force employed the following principles to guide the development and discussion of recommendations:

- Recommendations will ensure local communities and levee sponsors continue to have an integral role in submitting a levee accreditation package for the NFIP.
- Recommendations will preserve the objectives of each agency’s program missions.
- Recommendations will focus on accreditation decisions of a levee system and not individual segments.

Building on Previous USACE and FEMA Collaborative Efforts

The Flood Protection Structure Accreditation Task Force builds on ongoing collaborative actions between USACE and FEMA. FEMA and USACE are working together – from USACE District Offices and FEMA Regional Offices to the agencies’ headquarters – to help communities manage and reduce their flood risk.

PREVIOUS CONGRESSIONAL REQUESTS RELATED TO LEVEE NFIP ACCREDITATION.

Most recently, the FEMA/USACE Fiscal Year 2012 Task Force (Levee12 TF) drafted a report that described the short- and long-term

opportunities for aligning levee data to meet NFIP levee accreditation requirements.¹ This report focused primarily on the USACE levee inspection checklist. Much of the work of the Flood Protection Structure Accreditation Task Force builds from the Levee12 TF’s initial analysis and recommendations.

Prior to the Levee12 TF effort, Congress directed FEMA to create an interagency task force to “track, address, and, where possible, resolve concerns stemming from FEMA’s mapping efforts in communities with flood control infrastructure protection, such as levees, drainage, or dams.”² This joint OMB-FEMA-USACE task force provided quarterly reports to Congress that described the timing, nature, and results of community, sponsor, and other agency inquiries and meetings related to levees and levee accreditation under the NFIP.

AGENCY-TO-AGENCY COLLABORATION ON LEVEE ACCREDITATION BETWEEN USACE AND FEMA.

USACE and FEMA have worked closely to develop policies and processes to share information about levee systems, including available performance and inspection data, with each other and with communities to ensure the most recent data is available to inform communities of their flood risk, including levee-related flood risk.

As a result, the USACE and FEMA have already begun to improve alignment of their activities and policies and the timing of their program delivery. Below are a few examples

- USACE has led the development of the National Levee Database and continues efforts to integrate levee data collected by FEMA during its insurance studies and map updates currently stored in the Mid-Term Levee Inventory. When integration is complete (expected by December 2013), a sponsor or community will be able to find USACE and FEMA data regarding their levee in one place.

¹ The Levee12 Task Force was established by Senate Report 112-74, accompanying the Fiscal Year (FY) 2012 Consolidated Appropriations Act (P.L. 112-74). The Levee12 Task Force was directed to better align NFIP levee accreditation requirements with levee inspections performed by or for USACE such that information and data collected for either purpose can be used interchangeably to the maximum extent practicable toward satisfying levee accreditation requirements. As of December, 2012, this Report is being reviewed by the Department of Homeland Security.

² Senate Report 111-188, accompanying the FY 2010 Supplemental Appropriations Act (P.L. 111-112).

FLOOD PROTECTION STRUCTURE ACCREDITATION TASK FORCE: INTERIM REPORT

- FEMA has contracted with the National Academy of Sciences to conduct a study that will recommend ways in which levee-related programs within the federal government with different missions should be further aligned to complement each other and maximize their benefits to the nation. The National Academies' Task Force on Levees and the National Flood Insurance Program report is expected in April 2013 and will inform this effort.
- USACE and FEMA have been jointly participating in several national-level task forces and working groups addressing levee and flood risk management issues, including the National Committee on Levee Safety and the Federal Interagency Floodplain Management Task Force. These efforts have resulted in an improvement in understanding of each other's missions, programs and priorities as well as concerns and interests of local, state and regional governments, tribes, citizens, and the private sector.
- USACE and FEMA have held meetings in communities across the nation related to flood map updates where flood risk reduction infrastructure such as levees are present. These meetings are part of FEMA's Map Modernization efforts, FEMA's Risk Mapping Assessment and Planning (Risk MAP) efforts, and USACE Levee Safety Program activities. These joint meetings have been tailored toward community and sponsor needs and have served as joint problem-solving and data-exchange events for all types of levee-related issues, including accreditation.
- Currently, 33 states have active Silver Jackets teams where federal agencies, including USACE and FEMA, are partnering with states to form a unified forum to address the state's flood risk management priorities. This new program is serving as a starting point to integrate USACE and FEMA activities, along with those of other federal agencies, to support state-led prioritization and coordination to reduce flood damages and risk.
- Several policies related to levees and mapping levees for the NFIP have been coordinated between USACE and FEMA, including FEMA's levee analysis and mapping procedures, FEMA Procedure Memorandum 63, *Guidance for Reviewing Levee Accreditation Submittals* (PM 63), FEMA's Provisionally Accredited Levee policies and processes, USACE's *System-Wide Improvement Framework* policy, and emergency response and recovery actions after floods that impact levee systems. This standard practice of collaboration has led to an improved understanding of each other's programs, clearer and more consistent communication with communities and sponsors, and an improved alignment of programs while still fulfilling key USACE and FEMA missions.
- USACE and FEMA are developing a joint publication to outline roles and responsibilities related to levees. The agencies are continuing to coordinate and use consistent terminology related to levees, levee safety, and accreditation for the NFIP.

BACKGROUND AND CONTEXT

Overview of the National Flood Insurance Program and the USACE Levee Safety Program

This section briefly describes USACE and FEMA authorities and programs, as well as the role of the non-federal sponsor and local communities. In addition, this section describes the scope of levees the Task Force recommendations may impact.

THE NATIONAL FLOOD INSURANCE PROGRAM. The NFIP was created to reduce flood damages by identifying flood hazards, encouraging sound community floodplain management practices, and providing flood insurance to lessen the financial impact of flooding.³ While the NFIP provides access to flood insurance for participating communities and strives to reduce flood damages through floodplain management regulations, FEMA also identifies and maps the nation's flood hazards. Mapping special areas of flood hazards creates broad-based awareness of the flood hazards and provides data necessary for participating communities to use for their floodplain management programs to encourage responsible floodplain management or to promote whole community activities that reduce future flood losses and speed up post-flood recovery (e.g., buyouts/land conversion to green space, floodproofing buildings).

More than 21,000 communities across the U.S. and its territories participate in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage. In exchange, the NFIP makes federally-backed flood insurance available to homeowners, renters, and business owners in these communities. Community participation in the NFIP is voluntary. The NFIP requires all new or substantially improved structures

be constructed at or above the elevation of the 1% annual chance exceedance (1% ACE) or 100-year flood (this is defined as the “base flood” in NFIP regulations).⁴

Communities or parties seeking recognition of a levee system on NFIP maps must provide data and documentation in accordance with program requirements, detailed in 44 CFR 65.10, demonstrating that the levee system is expected to perform during the 1% ACE event.⁵ Once compliance is demonstrated, the levee system can be accredited on NFIP maps, reflecting the appropriate flood hazard zones. Nevertheless, accreditation is not a guarantee or warranty of performance of a levee system during a flooding event. Generally the area behind the accredited levee is designated as Zone X (shaded) on the NFIP Flood Insurance Rate Map and, in most cases, mandatory flood insurance purchase requirements of the NFIP do not apply. Many communities pursue accreditation of a levee system to lessen the financial burden of flood insurance on the property owners. If a levee is accredited for the NFIP, flood insurance is available to the property owners behind the levee. Although purchasing flood insurance is not mandatory, it is encouraged.

THE USACE LEVEE SAFETY PROGRAM.

USACE created its Levee Safety Program with the mission to assess the integrity and viability of levee systems and recommend courses of action to ensure that levee systems under its authorities do not present unacceptable risks to the public, property, and environment. The basic objectives of the Levee Safety Program are to (1) conduct assessments of levee systems within the program; (2) evaluate, prioritize, and justify levee safety activities; and (3) make recommendations to improve life safety associated with levee systems. USACE continues to aggressively advance new methodologies for assessing, communicating, and managing flood risks

³The NFIP is administered by FEMA under the National Flood Insurance Act of 1968, as amended, and the Flood Disaster Protection Act of 1973, as amended, codified at 42 U.S.C. 4001 et seq.

⁴ Code of Federal Regulations, Title 44, Section 59.1 of the National Flood Insurance Program (NFIP) regulations provides definitions of NFIP terms, including “base flood.”

⁵ Code of Federal Regulations, Title 44, Section 65.10. Identification and Mapping of Special Flood Hazard Areas: Mapping of areas protected by levee systems. See Appendix C.

WHY THE 100-YEAR FLOOD?

Excerpt from “Risk Analysis and Uncertainty in Flood Damage Reduction Studies” – 2000 National Research Council

The concept of the 100-year flood is central to the National Flood Insurance Program and to many of the Corps’ flood damage reduction activities. Hundreds of government officials administer or work within these flood mitigation and damage reduction programs, to which millions of taxpayer dollars have been devoted. Many consultants are employed in mapping the nation’s 100-year floodplains and scores of university professors analyze the hydrological, statistical and public policy implications of the 100-year flood. Given the economic and social importance of these efforts, one would assume that the selection of the 100-year flood as a defining hydrological event is based on sound scientific and statistical foundations.

Gilbert White, professor emeritus of geography at the University of Colorado, is widely recognized as a leader in promoting sound US flood management strategies. In 1993, Professor White provided an oral interview to Martin Reuss, the Corps of Engineers’ senior historian. In that interview, White’s response to a question about the selection of the 100-year flood sheds some light on the rationale for its selection. Given his knowledge of and experience in the US floodplain management, Gilbert White’s account may be among the better explanations for the prominence of the 100-year flood in US floodplain management and policy. In response to the question “How do you take into account the so-called catastrophic flood — the once in 100-years flood?” White stated:

“There was a very interesting development of the notion that there could be a flood of sufficiently low frequency that no effort should be made to cope with it. The Federal Insurance Administration picked one percent [or] a recurrence interval of a hundred years. And some of us were involved in that because we recognized that they initially had to have some figure to use. The one-percent flood was chosen. I think Jim Goddard and TVA

colleagues would be considered parties to the crime. With the lack of any other figure, the concept taken from TVA’s “intermediate regional flood” seemed a moderately reasonable figure. We generally use the term “catastrophic flood” for events of much lesser frequency.

This goes back to my earlier criticism of the FIA and its determination to cover the country promptly. In covering the country promptly they established one criterion—the 100-year flood. I think it would have been much more satisfactory if they had not tried to impose a single criterion but had recognized that there could be different criteria for different situations. This could have been practicable administratively even though a federal administrator would say it’s far easier, cleaner, to have a single criterion that blankets the country as a whole.

What’s the effect of having a criterion of 100 if in doing so a local community is encouraged to regulate any development up to that line and then to say we don’t care what happens above that line? We know that in a community like Rapid City the floods were of a lesser frequency than 100 years, and a community ought to be aware of this possibility. A simplified national policy tended to discourage communities from looking at the flood problem in a community-wide context, considering the whole range of possible floods that would occur.

So I would say that any community ought to be sensitive to the possibility of there being a 500-year flood, or a 1,000-year flood. It should try to consider what it would do in that circumstance, and wherein it could organize its development so that if and when that great event does occur it will have the minimum kind of dislocation.”

FEMA AND USACE BOTH FOCUS ON RAISING AWARENESS OF LEVEE-RELATED FLOOD RISK

Construction and maintenance of a levee is only one element of flood risk reduction for the community. FEMA and USACE are working together to make communities more aware of their levee-related flood risk through concerted education and outreach efforts to support the community's efforts to ensure life safety. Individual property owners are learning more about flood risk from a breached or overtopped levee and how they can reduce risk to their families, businesses, and communities.

associated with levees. With more than 10 million people living or working behind levees within its jurisdiction, USACE considers the role it has in assessing and communicating risks a top priority.

LOCAL COMMUNITIES AND LEVEE SPONSORS ARE IMPORTANT PARTNERS.

Even when USACE or FEMA have the authority to aid the community in managing flood risk through structural (levee systems) or nonstructural (flood insurance) approaches, the community is a key partner in every activity. Critical decisions about land use, flood risk management and mitigation approaches – including construction and maintenance of levees and economic development decisions – are all made at the local level. Local communities, including levee districts, flood control boards, and other local and regional government entities, generally have operations and maintenance responsibilities for structures built to reduce the impact of flooding on a community, such as levees or floodwalls.⁶ Although varied in their approaches, states support local governments through the development of rules, regulations and statewide ordinances for floodplain management and infrastructure investments. Community participation in the NFIP is a local decision, as is whether or not to seek to accredit a levee or flood risk reduction structure on Flood Insurance Rate Maps.

Scope of the Task Force: Levees Under Consideration

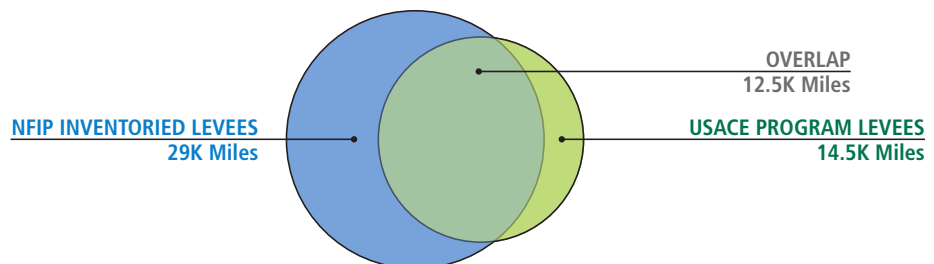
USACE and FEMA maintain inventories of levees for the purposes of their respective missions, including the levees' general location, condition, and other information.

The Task Force estimates that there are approximately 12,500 miles of levees that exist in both USACE and FEMA's inventories. Of these 12,500 miles, approximately 3,000 miles are currently accredited under the NFIP (Figure 1). For the final report, the task force will provide an update on the accreditation status of the remaining 9,500 miles.

As of July 2012, FEMA has documented approximately 29,000 miles of levees included in NFIP-participating communities, including information relative to the FEMA accreditation status and structures that were identified as levees on NFIP maps in its Mid-Term Levee Inventory.

USACE has approximately 14,500 miles of levees included in its Levee Safety Program and inventoried in the National Levee Database. Information about USACE Levee Safety Program levees includes data and information collected by program activities (such as inspections). Efforts are underway to integrate Mid-Term Levee Inventory data

Figure 1: LEVEE MILES CURRENTLY IN USACE AND FEMA INVENTORIES



⁶ USACE has operations and maintenance responsibility for about 2,800 miles of levees and performs levee evaluation for NFIP accreditation purposes for these levees.

FLOOD PROTECTION STRUCTURE ACCREDITATION TASK FORCE: INTERIM REPORT

into the National Levee Database, with a target of full integration by December 2013.

There are three primary categories of levees for which USACE has authority. It is important to understand these different categories because USACE programs and procedures for collecting data and conducting analyses vary depending on the category of levee and the authority under which it is managed, impacting the role that USACE can play in the NFIP accreditation process.

FEDERALLY CONSTRUCTED, OPERATED AND MAINTAINED LEVEES. USACE constructed, operated, and maintained levees account for approximately 13 percent of the 12,500 miles of levees that are both in the NFIP inventory of levees and USACE program levees. USACE conducts routine and periodic inspections and screenings on these levees, and budgets for their operations and maintenance. USACE is likely to have extensive and detailed information for these levees including design and performance documentation.

Because USACE has operations and maintenance authority for these levees, USACE performs the levee evaluation for NFIP accreditation purposes at the request of the local community seeking accreditation.

USACE performs this evaluation in accordance with Engineer Circular 1110-2-6067, *USACE Process for the National Flood Insurance Program (NFIP) Levee System Evaluation*. The results of this evaluation are accepted by FEMA in place of the structural accreditation requirements of 44 CFR 65.10.

FEDERALLY CONSTRUCTED/LOCALLY OPERATED AND MAINTAINED LEVEES.

USACE constructed/locally operated and maintained levees account for approximately 73 percent of the 12,500 miles of levees that are both in the NFIP inventory of levees and USACE Levee Safety Program levees. USACE conducts routine and periodic inspections and screenings for these levee systems through the Levee Safety Program. Documentation for these levees is typically more thorough than for locally-constructed levee systems and usually includes design studies and analyses. However, there may not be complete information (data and analysis) necessary to prepare a full NFIP accreditation package, especially for older systems.

NON-FEDERALLY CONSTRUCTED/LOCALLY OPERATED AND MAINTAINED LEVEES.

Some non-federally constructed/locally operated and maintained levees are in the USACE inventory because the owners of these levee systems have enrolled in

Table 1: TYPICAL DATA AVAILABLE FOR CATEGORIES OF LEVEES IN USACE LEVEE SAFETY PROGRAM

FEDERALLY CONSTRUCTED, OPERATED & MAINTAINED	FEDERALLY CONSTRUCTED/LOCALLY OPERATED & MAINTAINED	NON-FEDERALLY CONSTRUCTED/LOCALLY OPERATED & MAINTAINED
<ul style="list-style-type: none"> Routine Inspections Periodic Inspections Screenings Design Reports Performance Reports 	<ul style="list-style-type: none"> Routine Inspections Periodic Inspections Screenings Design Reports 	<ul style="list-style-type: none"> Routine Inspections Screenings Limited Design Reports
Typical Data Gap: Moderate to Minimal	Typical Data Gap: Moderate	Typical Data Gap: Significant

the USACE Rehabilitation and Inspection Program, which makes them eligible for federal cost share of repairing flood damage to their levee under Public Law 84-99. These levees account for approximately 14 percent of the 12,500 miles of levees that are both in the NFIP inventory of levees and USACE Levee Safety Program levees. Because USACE was not involved in the design and construction of these levees, documentation is typically minimal, usually consisting of only USACE routine inspections and screenings. It is rare that design studies and analyses are available and therefore, these levees typically have the largest data gap when compiling a NFIP accreditation package.

The Challenges of Aligning USACE Levee Safety Program and the National Flood Insurance Program

There are several challenges in aligning USACE activities with NFIP levee accreditation requirements. Both agencies are concerned with life safety, reduction of property damage due to floods and communicating flood hazards and risks, but their authorities and programs have different specific missions for collecting information and conducting analysis related to levees.

Below is a description of some of the key challenges of this effort.

USACE LEEVE SAFETY PROGRAM ACTIVITIES EXAMINE AND EVALUATE ALL LEEVES WITHIN THE PROGRAM REGARDLESS OF DESIGN LEVEL; NFIP LEEVE ACCREDITATION REQUIREMENTS FOCUS SOLELY ON THE 1% ANNUAL CHANCE EXCEEDANCE (ACE) EVENT. The USACE Levee Safety Program collects data and conducts analyses to assess how levees are expected to perform and what the potential consequences would be in cases of levee breach or overtopping according to

their design level. Levee accreditation for the NFIP is focused on a different decision, namely determining eligibility and rates for federally backed flood insurance. The accreditation of a levee system for the NFIP is a binary decision – is a particular levee likely to be high enough and strong enough to withstand the 1% ACE flood? The 1% ACE standard for the NFIP is for flood insurance and floodplain management purposes and is not a safety standard for levees. In the case of a levee designed to the 0.2% ACE event (500-year), the USACE inspection would assess the levee to the 0.2% design level. Unless the levee is designed to the 1% ACE event, USACE does not routinely produce information specific to the 1% ACE event, as required for accreditation for the NFIP.

DIFFERENT PROGRAMMATIC TIMELINES AND REVIEW PROCESSES CAN AFFECT ABILITY OF FEMA AND USACE TO FULLY UTILIZE EACH OTHER'S DATA. Currently, the schedule of each USACE and FEMA program activity align with the specific purposes and priorities of that program. For example, the frequency and timing of activities under the USACE Levee Safety Program may not align with a new mapping effort by FEMA under the NFIP. In addition, some of the activities and their priorities (in both programs) are triggered by events, further complicating alignment of agency activities (e.g., updating a Flood Insurance Rate Map, conducting a levee screening).

TO ENSURE A COMPREHENSIVE EVALUATION OF A COMPLETE LEEVE ACCREDITATION PACKAGE, PARTIAL SUBMITTAL OF NFIP ACCREDITATION PACKAGES ARE CURRENTLY NOT ALLOWED. Levee systems are a collection of components that must function as a complete and integrated system to be effective. To ensure the accreditation package takes into account all aspects of the levee system, FEMA currently only accepts a single

FLOOD PROTECTION STRUCTURE ACCREDITATION TASK FORCE: INTERIM REPORT

Table 2: KEY LEVEE-RELATED PRODUCTS AND DATA

PRODUCT	CURRENT RECURRENCE INTERVAL	CURRENT STORAGE LOCATION
USACE LEVEE SAFETY PROGRAM PRODUCTS		
Routine Inspection (also applies to non-federal levees in the Rehabilitation & Inspection Program)	Annual	National Levee Database (NLD)
Periodic Inspection	5 Years	NLD
Original Design Documents (Feasibility Studies, General Design Memorandums, Definite Project Reports, etc.)	Produced one time only prior to project construction	Hard copy resides with USACE District Office; additional distribution varies (could be stored as stand-alone documents in NLD)
As-Built Drawings, Operation and Maintenance Manuals	Produced at time of construction; may or may not be updated over the life of the project as modifications are made	NLD (embedded within Periodic Inspection reports, but could be stored as stand-alone documents)
Crest Elevation/Feature Survey	Baseline surveys completed in 2009-2010 as part of ARRA initiative	NLD
Levee Screening	Currently being completed on entire USACE portfolio; may be updated on 10-year basis	Levee Screening Tool (specific information or reports could be stored as stand-alone documents in NLD)
Risk Assessment	Currently being performed on projects with potentially high risk (as determined by risk screenings); no set frequency for updates	Hard copy resides with USACE District Office; additional distribution varies (could be stored as stand-alone information in NLD)
FEMA GENERATED AND COLLECTED PRODUCTS		
Flood Insurance Studies (FIS), Maps (FIRMS), DFIRM database	Need reassessed every 5 years	FEMA Map Service Center (digital library available to public); FEMA Regional Office, USACE District Office
Hydrologic and Hydraulic Modeling	Varies (as needed)	FEMA Mapping Information Platform (digital library available to public)
National Flood Hazard Layer	Varies (as needed)	FEMA Mapping Information Platform (digital library available to public)
Accreditation Packages (FEMA PM 63)	Varies	FEMA Map Service Center; FEMA Regional Office, USACE District Office
RiskMAP non-regulatory products	Varies	FEMA Regional Office and local community
SPONSOR DEVELOPED AND COLLECTED PRODUCTS		
Sponsor Collected Data (e.g., Emergency Action/ Evacuation Plans, System Wide Improvement Framework (SWIF) plans, Section 408 Project Modification Submittals, Video Inspection of Culverts, Pump Station Megger Testing, etc.)	Varies	Resides with Project Sponsor; USACE District Office should have copies (could be stored as stand-alone documents in NLD)

ONGOING ACTIVITIES, PROGRAMS, AND STUDIES THAT MAY INFORM FLOOD PROTECTION STRUCTURE ACCREDITATION TASK FORCE RECOMMENDATIONS

- NFIP Reauthorization: Moving Ahead for Progress in the 21st Century Act (MAP-21).
- Levee Safety Engineer Circular (USACE)
- Levee Analysis Mapping Procedures (FEMA)
- Engineer Regulation 500-1-1 (P.L. 84.99): Emergency Employment of Army and Other Resources, Emergency Management and Contingency Operations (USACE)
- Engineer Circular 1110-2-6067: USACE Process for the National Flood Insurance Program Levee System Evaluation
- Task Force on Levees and the National Flood Insurance Program: Improving Policies and Practices (National Academies of Science)

complete package for accreditation, rather than partial packages submitted by multiple parties. Honoring this requirement for a complete submittal package from a single entity, USACE provides available data to communities seeking to accredit their levee for the NFIP, but does not determine whether or not the data meets the accreditation requirements of 44 CFR 65.10.

CONCERNS ABOUT PRIVATE SECTOR LIABILITY CONTRIBUTE TO DUPLICATION OF EFFORT. Concern in the engineering community and among levee districts, owners, and operators regarding potential

liability related to levee performance is promoting duplication of data collection and analysis already conducted by USACE. Even though levee accreditation under the NFIP regulations is not considered to be a warranty or guarantee of levee performance, the desire to limit corporate and personal liability is driving engineering firms to require that data be collected in a manner they can personally verify prior to affixing their professional engineer's stamp on an accreditation package. In order to be effective and efficient, alignment recommendations must take this type of redundancy into consideration.

TASK 1: DEVELOP RECOMMENDATIONS SO THAT INFORMATION AND DATA COLLECTED FOR EITHER NFIP ACCREDITATION OR THE INSPECTION OF COMPLETED WORKS PROGRAM CAN BE USED INTERCHANGEABLY

To gain a better understanding of the type of levee information currently shared between FEMA Regional Offices and the USACE District Offices, the Levee12 task force analyzed an e-mail survey in May 2012 with all USACE Districts with levees and corresponding FEMA Regions participating. Overall, the results of the survey confirmed that levee inspection reports and other levee information such as Flood Insurance Studies and Flood Insurance Rate Maps are being shared between FEMA Regional Offices and the USACE District Offices. The exchange of other information, such as levee rehabilitation information or NFIP accreditation packages, was inconsistent. Neither agency had specific

policies that outline what actions should take place after the information is exchanged.

The Task Force compiled more detailed information regarding key products, the frequency with which they are updated, and where they are currently stored (Table 2).

Possibilities for Improving Data Exchange and Risk Communication

The Task Force is evaluating the National Levee Database as the main conduit for information exchange. Authorized by

Congress in 2007, the database currently contains information on USACE Levee Safety Program levees, such as attributes of levees and floodwalls relevant to flood fighting, design, construction, operation, maintenance, repair, and inspection. Information in the National Levee Database remains dynamic, as new information from a variety of sources is continually collected and loaded.

USACE and FEMA are working together to add levee data from other federal agencies, state agencies, and tribes, with the ultimate goal of including all of the nation's levees. FEMA initiated the development of a Mid-Term Levee Inventory database in 2007 to complement the National Levee Database. The Mid-Term Levee Inventory data model was extracted from the National Levee Database to ensure consistency, while addressing data collection and development efforts relevant to items of interest to FEMA. The primary purpose was to capture and supply levee data as FEMA interfaced with communities through the production of countywide Flood Insurance Study reports and Flood Insurance Rate Maps.

The integration of the Mid-Term Levee Inventory with the National Levee Database will enhance the National Levee Database, because FEMA has compiled levee data for non-federal levees that are not included in the National Levee Database. An initial pilot integration of the two databases merged Mid-Term Levee Inventory data for FEMA Region VII into the National Levee Database. FEMA

and USACE have developed an interagency technical team to identify and resolve any remaining issues to ensure that the Mid-Term Levee Inventory data for the remainder of the nation can be merged efficiently and effectively.

In addition to the previously referenced benefits of having a single national database of levees, the Mid-Term Levee Inventory – National Levee Database integration will be particularly valuable in aligning USACE and FEMA data for the purposes of NFIP accreditation. The National Levee Database will then serve as a common repository for both the data associated with USACE levee inspections, design, construction, operation, and maintenance, and the data associated with FEMA's levee accreditation, analysis, and mapping efforts. As levee owners and sponsors will have access to data relevant to their levee system, the National Levee Database will serve as a one-stop shop for locating all available data for a levee system. When integration is completed, USACE and FEMA plan to generate a reporting mechanism for data available for communities and other federal agencies. Integration is expected to be complete by the end of calendar year 2013. It is expected that both agencies will need to develop specific policies and procedures to define what data are exchanged and at what frequency information is updated. Decisions on how to share data should leverage opportunities to mutually support specific agency goals.

TASK 2: DEVELOP RECOMMENDATIONS SO THAT INFORMATION AND DATA COLLECTED BY OR FOR THE INSPECTION OF COMPLETED WORKS PROGRAM IS SUFFICIENT TO SATISFY NFIP ACCREDITATION REQUIREMENTS

The Task Force's initial step to addressing this task was to identify current USACE Levee Safety Program activities and the specific NFIP levee accreditation requirements that those activities would meet. (See Appendix C for the regulatory requirements for NFIP levee accreditation.) The activities reviewed include USACE levee inspections (routine and periodic), screenings, and risk assessments. The result is that these USACE activities can fulfill some NFIP accreditation requirements, but not all the requirements can be met.

In keeping with the principles set forth by the Task Force, changes to USACE and FEMA processes should retain the primary purposes of the activities, be beneficial to both USACE and FEMA, and be the most effective way to meet the objectives with minimal impacts.

Key USACE Activities That Contribute Data/Information/Analysis That May Inform NFIP Accreditation Decisions

Ongoing USACE activities, specifically those within the Levee Safety Program, can result in information that can be used to meet individual NFIP accreditation requirements. USACE uses a portfolio management process that incorporates a set of activities for all levees within their authorities, including routine inspections, periodic inspections,

screenings, and a set of increasingly refined risk assessments if results from inspections and screenings warrant a more in-depth analysis of levee risks.

Activities are conducted by USACE in conjunction with the levee sponsor (where applicable). While the specific activities and detail of those activities vary depending on the particular authority, the four activities described below are the most commonly conducted activities.

INSPECTIONS. USACE conducts levee inspections to: 1) identify deficiencies or areas that need monitoring or immediate repair; 2) continuously assess the integrity of the levee system to identify any changes over time; 3) collect information to make informed decisions about future actions; 4) determine if the levee sponsor is in compliance with the project partnership agreement, if applicable; and 5) determine eligibility for federal rehabilitation funding through the Rehabilitation and Inspection Program (in accordance with P.L. 84-99). These inspections are conducted using a standardized inspection checklist to evaluate and rate 125 specific items/components along levee embankments, floodwalls, interior drainage systems, pump stations, and channels, resulting in an overall levee system inspection rating.

USACE conducts two types of inspections:

Routine Inspections. USACE routine inspections, typically completed annually, are intended to verify proper operations and maintenance of the levee systems and to identify deficiencies or areas that need monitoring or repair. These inspections utilize performance and operational history and visual observation; there is no design analysis. These are conducted on all levees in the USACE portfolio.

Periodic Inspections. USACE periodic inspections, typically completed every five years and only on federally authorized levees in the USACE portfolio, are intended to verify proper operations and maintenance and to evaluate the condition of the levee system in relation to the operational adequacy and structural stability of the system. The periodic inspections, completed by a multidisciplinary team, include a detailed inspection of the items/components in the routine inspection checklist. In addition to the routine inspection activities, pre-inspection documentation collection and review is completed along with a design criteria review to identify potential performance impacts and evaluate the design analyses used against current design standards.

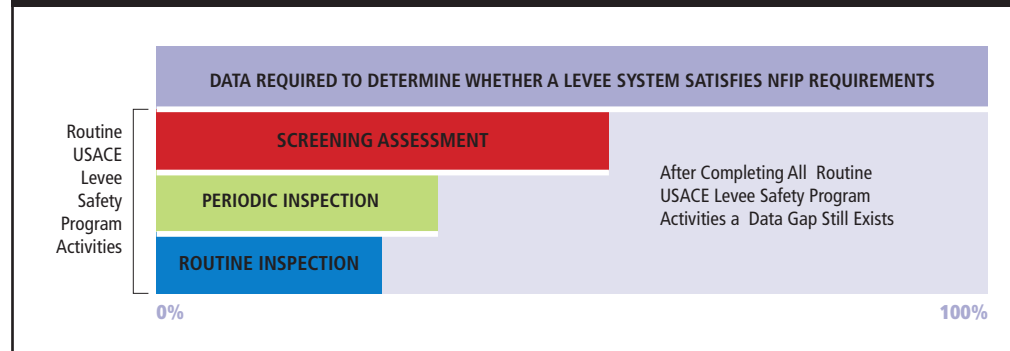
SCREENINGS. Screenings are currently being performed on all levees within USACE authorities to support an initial, risk-informed classification of the portfolio and set priorities for more detailed analysis. The screening relies on existing data, engineering judgment, and consequence estimation to characterize the relative risks posed by levees within the portfolio in terms of a relative probability of breach and potential risk to life and property. A simplified probabilistic framework is used to account for the likelihood of flood loading, performance of the levee, and consequences due to levee breach or overtopping. Flood loading estimates are made based on available

design records, flood insurance studies, gage records, or other readily available, relevant information. Estimates of levee performance are based on an engineering assessment of items from the routine and periodic inspections and a review of available design, construction, and past performance records. Consequence estimates are made using readily available data from the National Levee Database, United States Geological Survey National Elevation Dataset, and FEMA HAZUS database.

RISK ASSESSMENTS. Risk assessments are typically more rigorous than screenings and are conducted when more detailed information is needed to make a specific decision (e.g., levee fix/improvement) or when results from levee inspections or screenings indicate a potential life safety risk. Risk assessments provide a more comprehensive understanding of the true risk associated with a given levee system and may include: 1) detailed understanding of likelihood of various loading frequencies; 2) levee performance for a full range of potential loads; and 3) consequences of breach under different scenarios. Because detailed risk assessments are tailored toward the particular question(s) and levee system at hand, significant variation in scope and detail exist. USACE uses the results from these risk assessments to verify risk classifications from screenings and also to provide necessary information so that decision makers can determine what risk reduction actions are needed based on the concepts of tolerable risk.

The USACE Levee Safety Program is in the initial stages of developing a methodology and best practices for risk assessments and is pilot testing these approaches. These risk assessments can include almost all of the necessary information to inform judgment on the ability, or inability, of a specific levee to meet NFIP accreditation design requirements.

Figure 2: THE DATA GAP IN MEETING NFIP ACCREDITATION REQUIREMENTS THROUGH USACE ACTIVITIES



OTHER USACE ACTIVITIES. There are other USACE activities conducted during planning or rehabilitation activities that may contribute levee information for accreditation purposes. The timing and availability of data is largely driven by specific Congressional appropriation and may or may not be available when information is needed for NFIP accreditation purposes. These additional USACE activities include:

- Pre-authorization studies and reports to determine if water resources problems warrant federal participation (reconnaissance phase studies) and investigate and recommend solutions to water resources problems (feasibility phase studies). Project designs are analyzed as part of a recommended solution in relation to existing and potential future conditions.
- Post-authorization studies and reports include planning, engineering, and design activities. These products include general reevaluation studies, design documentation reports, and project as-built documentation.
- Activities under USACE Floodplain Management Services, Planning Assistance to States, Review of Completed Works studies and Modification studies can provide additional information.

- USACE emergency response and/or disaster assistance activities, including floodfight reports and project information reports for post-flood rehabilitation assistance.

Identifying the Gap: How do Current USACE Levee Safety Activities Align with NFIP Accreditation Requirements?

Currently, routine and periodic levee inspections and screenings alone do not produce all the data and documentation needed for an NFIP levee accreditation decision as detailed in 44 CFR 65.10, and the final USACE inspection rating is not directly linked to whether or not the levee system meets NFIP accreditation requirements. In other words, an “Acceptable” inspection rating from USACE does not necessarily mean that the levee meets all NFIP accreditation requirements. However, some of the USACE inspection items could be used to satisfy some of the NFIP accreditation requirements.

In some cases, results from screenings are able to provide adequate information to reach NFIP accreditation decisions on individual requirements. In other cases, the screenings will indicate that additional analysis or action is necessary to obtain adequate

FLOOD PROTECTION STRUCTURE ACCREDITATION TASK FORCE: INTERIM REPORT

information to reach NFIP accreditation decisions. Additional efforts will be necessary to effectively bridge gaps between the USACE screenings and NFIP accreditation requirements. A side-by-side comparison of NFIP accreditation requirements and USACE Levee Safety Program routine activities is summarized in Table 3. The table also identifies specific alignment areas where USACE and FEMA could efficiently modify activities to better align.

Analyzing the Gap: USACE Levee Safety Program Activities and NFIP Accreditation Requirements

USACE ROUTINE AND PERIODIC INSPECTIONS. Although inspections contain items pertaining to levee performance, additional analysis and documentation is typically necessary to make a decision in relation to NFIP accreditation requirements.

Table 3: COMPARING 44 CFR 65.10 REQUIREMENTS AND USACE ROUTINE LEVEE SAFETY PROGRAM ACTIVITIES

NFIP ACCREDITATION REQUIREMENTS		USACE LEVEE SAFETY PROGRAM ACTIVITY		
CFR REQUIREMENTS CATEGORY	CFR REQUIREMENTS SUBCATEGORY	ROUTINE INSPECTION	PERIODIC INSPECTION	SCREENING
Design	Freeboard (levee height)			
	Closure devices for all openings			
	Embankment protection			
	Embankment and foundation stability			
	Settlement			
	Interior drainage			
Operations Plan – Closures	Flood warning system			
	Officially adopted closures plan			
	Periodic operation			
Operations Plan – Interior Drainage Systems	Flood warning system			
	Officially adopted operations plan			
	Manual backup			
	Periodic inspection/operation			
Maintenance Plan	Officially adopted maintenance plan			
	Jurisdiction			
	Document procedures			
Certification Requirements	Certified by P.E. or federal agency			
	As built plans			

	Results from this USACE activity are able to provide adequate information to meet NFIP accreditation requirements in all cases.
	Results from this USACE activity are able to provide adequate information to meet NFIP accreditation requirements in some cases.
	Results from this USACE activity are unable to provide adequate information to meet NFIP accreditation requirements.
	Task Force has identified these activities as having the most opportunity to improve alignment.

Information necessary to provide a positive accreditation determination is not typically collected through routine inspections; however, some inspection items given an “unacceptable” inspection rating, such as closure structures, embankment protection or embankment stability (occurring below the 1% ACE) could indicate a concern and lead to a negative NFIP accreditation determination. See Appendix C for a detailed description of NFIP accreditation requirements.

USACE SCREENINGS. Screening includes the engineering assessment and review of historic information, inspection results, and performance records to evaluate the levee system’s expected performance with water levels at the crest of the levee. This water surface elevation may be different from the 1% ACE standard evaluated in NFIP accreditation requirements. Performance modes currently evaluated in screenings that also relate to NFIP accreditation requirements include closure structures, embankment protection, and embankment and foundation stability. Assessment of representative levee embankment loading and overtopping frequencies provide information regarding NFIP accreditation freeboard requirements.

USACE RISK ASSESSMENTS. The current process for USACE risk assessments can provide much of the information needed to inform an accreditation decision. Gaps that exist between current risk assessment process and NFIP accreditation requirements include:

- Some risk assessments rely on existing information that may not be recent enough or detailed enough to satisfy NFIP requirements.
- Risk assessments consider a range of potential flood events rather than estimate for a single specific flood event such as the 1% ACE event.

- NFIP requirements such as freeboard and settlement may not be evaluated during a risk assessment because risk assessments consider the height of the levee as it exists, whereas the NFIP evaluates whether or not the levee is high enough to meet NFIP accreditation requirements.
- Risk assessments consider the chance of inundation from a range of potential floods while the NFIP considers only the inundation associated with the 1% ACE flood.
- NFIP requirements for system components that typically do not pose a direct threat to life safety (e.g., interior drainage facilities, closure structures, operation and maintenance plans) may not be evaluated during a risk assessment in sufficient detail to support an accreditation decision.
- The assurance evaluations to determine the adequacy of the levee height that are required by Engineer Circular (EC) 1110-2-6067, USACE Process for the National Flood Insurance Program (NFIP) Levee System Evaluation, are not typically done during a risk assessment.
- The USACE Process for NFIP levee system evaluation (EC 1110-2-6067) currently requires deterministic methods for geotechnical and structural engineering analyses in support of levee evaluation decisions.

SOLICITING STAKEHOLDER FEEDBACK

In accordance with NFIP requirements for levee accreditation, it is the responsibility of the community or other parties seeking accreditation of a levee system to provide the necessary data and analysis. Community officials also play a crucial role in educating citizens about levee-related flood risks and helping citizens and businesses make a rapid recovery if levees do breach or overtop. Because of this leadership role of local and state governments and levee sponsors, the Task Force will solicit feedback from these key stakeholders on aligning USACE activities with NFIP accreditation requirements.

Soliciting Stakeholder Comments from All Regions

Due to the nature of the Congressional charge, the audience from which the Task Force is seeking input will include individuals and organizations responsible for and involved in actions leading to accreditation under the NFIP, as well as those impacted by USACE activities.

To inform the final report, the Task Force will develop and implement a stakeholder input strategy that:

- Ensures that the nature and severity of the problems associated with alignment of USACE and FEMA programs associated with making levee accreditation decisions for the NFIP are well understood, including regional or technical variation.
- Ensures that all USACE and FEMA policies and practices that impact actions leading to accreditation decisions under the NFIP have been identified and any issues related to these policies and their implementation are well understood by the Task Force.

- Seeks input on recommendations, including unintended safety, social, economic, and environmental consequences, from local sponsors, levee owners and operators, and communities.

Input will be solicited from “all regions” (this is interpreted to include geographical areas that cover all FEMA Regions). The Task Force expects input will be solicited virtually to reach the widest possible audience in the most efficient way.

Articulating Key Issues by Stakeholders Related to NFIP Accreditation

Communities, levee and flood control boards, engineering firms, and the associations and members of Congress that represent those groups, have long encouraged USACE and FEMA to share available data related to levees and to make the best use of that data collected. To better understand areas where stakeholder feedback is consistent or divergent and to collect and consider recommendations made to date that are relevant to the Task Force’s charge, the Task Force examined relevant existing sources of stakeholder feedback received by USACE and FEMA.

The Task Force conducted a literature review of existing documents and summarized issues related to NFIP accreditation and “de-accreditation” that had previously been communicated to both USACE and FEMA.

Sources of feedback examined include: 1) letters from members of Congress to FEMA and USACE on levee accreditation issues; 2) stakeholder involvement efforts related to FEMA and USACE policy reform efforts (e.g., NFIP Reform, Levee Safety Engineer Circular); and 3) stakeholder comments

ALIGNMENT OF USACE DATA AND INFORMATION TO MEET NFIP REQUIREMENTS COULD LEAD TO INCREASED DE-ACCREDITATIONS

There is a common misperception among state and local officials that most levees could be NFIP certified if USACE inspections could be altered slightly and provided in an NFIP-compliant format. It is possible that information provided by USACE inspections and analyses may yield negative determinations resulting in de-accreditation of a levee for the NFIP. More information does not necessarily mean a positive accreditation outcome.

received by the National Committee on Levee Safety and the Federal Interagency Floodplain Management Task Force. The comments are indicative of common concerns about the specific requirements of the NFIP and USACE authorities.

Stakeholder concerns coalesce around the following themes: affordability and liability; economic growth; communication challenges; and environmental issues.⁷

Commonly expressed concerns include:

- The cost to communities of developing NFIP accreditation packages for Flood Insurance Rate Maps, especially for small or rural communities.
- Concern that engineering firms would be unwilling to develop accreditation packages for a community – or that professional services would be too expensive for communities.
- The perception that FEMA and USACE were unable to share available data and information to facilitate the community’s levee accreditation and flood insurance mapping process.
- Confusion over the differences between data collected and analyzed for USACE inspections and risk assessments of levees in its Levee Safety Program portfolio and the NFIP levee accreditation requirements.
- Confusion and frustration when levees with “acceptable” levee inspection results from USACE may not meet the NFIP accreditation requirements.
- Confusion and frustration when levees that have been accredited by the NFIP may be found to have “unacceptable” or “minimally acceptable” evaluations during USACE inspections.
- Concerns that the results of routine or periodic inspections conducted by USACE will result in the de-accreditation of levee systems for the NFIP and result in increases in the number of properties subject to mandatory purchase requirements for flood insurance.
- Uncertainty of timing of flood mapping updates relative to results of levee inspections, the ability of sufficient time for communities to provide accreditation information before new maps (and potential flood insurance purchase requirements) are finalized, and resulting economic impact on communities.
- Frustration with the “all-or-nothing” policy for levee accreditation for the NFIP and uncertainty of how the FEMA levee analysis and mapping procedures under development will impact communities.
- Prior to the standardization of levee inspections and USACE guidance on the evaluation of levees for the NFIP under USACE Process for the National Flood Insurance Program (NFIP) Levee System Evaluation (Engineer Circular 1110-2-6067), there were differences in the processes between different USACE Districts, leading to confusion and frustration by sponsors and their Congressional representatives.

⁷ The FEMA-USACE-OMB task force that was convened in 2010 grouped concerns according to these four themes; and these groupings hold true for the stakeholder feedback the Task Force has considered to date. FEMA-USACE-OMB Task Force Fiscal Year 2010 Report to Congress, First Quarter. November 18, 2010.

Role of the National Committee on Levee Safety in Task Force Efforts

Members of the National Committee on Levee Safety (NCLS) bring expertise and perspectives from their experiences as state, local and regional governments and private sector representatives and as levee sponsors. To support their efforts, the Task Force has requested that the NCLS:

- Review key study questions for completeness and clarity.
 - Review and provide comments on the Task Force's interim and final reports.
 - Review and provide feedback on the development and implementation of the stakeholder involvement plan.
 - Review and provide feedback on the development of strategies.
- The NCLS also will assist the Task Force in the development, solicitation, analysis, and utilization of stakeholder inputs. The Task Force requested that the members of the NCLS:
- Review and provide feedback on the development of a stakeholder involvement approach to consider recommendations from all regions.
 - Assist the Task Force in identifying key stakeholders with experience in levee accreditation under the NFIP.
 - Assist the Task Force in reviewing and interpreting feedback received from stakeholders.

CONCLUSION AND NEXT STEPS

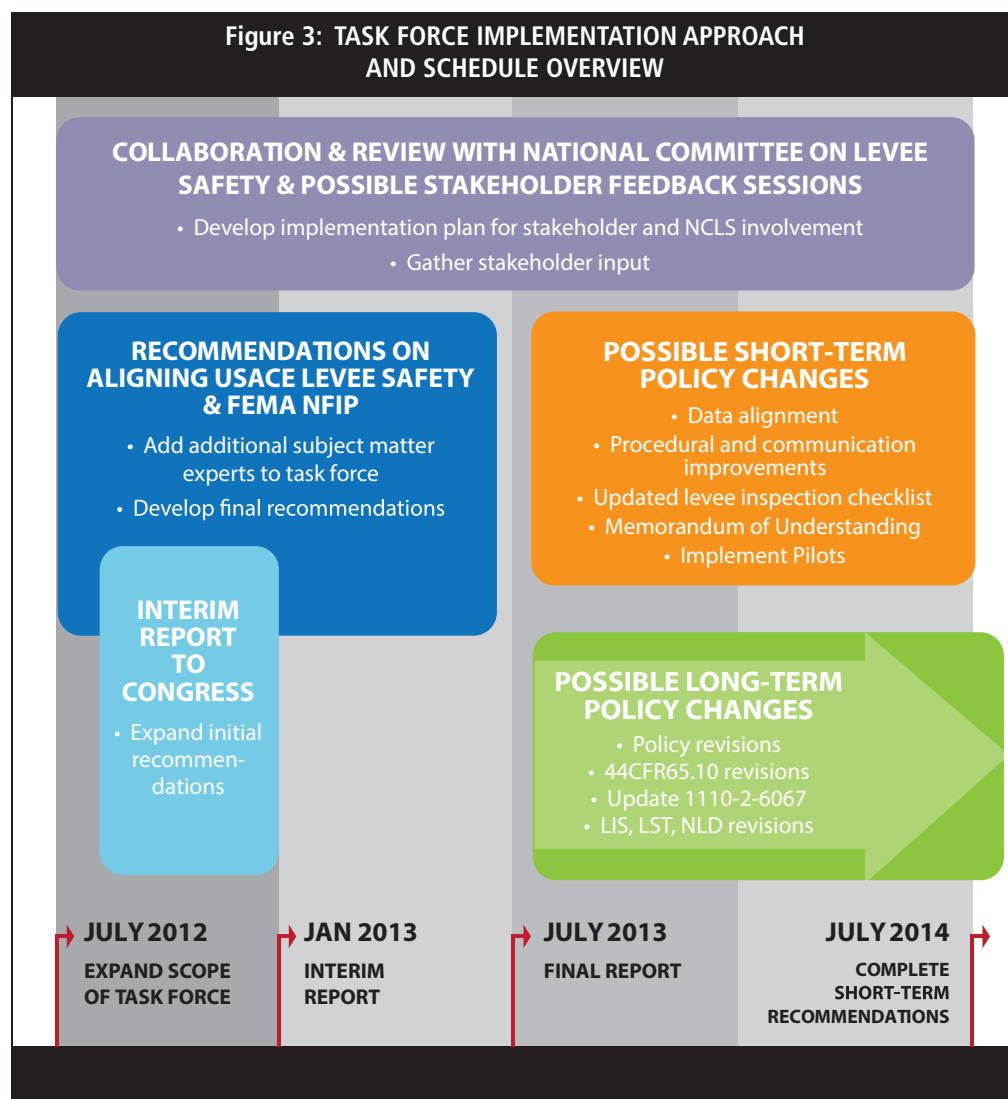
This interim report describes the gaps the Task Force has identified between the data and information collected by the USACE Levee Safety Program and NFIP accreditation requirements. In developing the final report, the Task Force will identify specific changes to process and policy and resource implications for narrowing the gaps. In addition, for communities seeking accreditation for the NFIP, access to information for accreditation decisions will become more efficient as USACE and FEMA continue to work to better align, thus reducing costs and effort for levee owners and operators.

At this time, the Task Force has identified activities for further consideration including, but not limited to, the following:

- Improving interagency communication.
- Modifying inspections and screenings.
- Ensuring data is readily available to levee sponsors.
- Developing interagency agreements and a documentation process (for accreditation determinations).

These actions, if appropriate, could be pursued to better align USACE and FEMA efforts. To maintain the principle of a comprehensive systems approach, any recommendations should consider the integration of data from multiple sources.

FLOOD PROTECTION STRUCTURE ACCREDITATION TASK FORCE: INTERIM REPORT



Approaches to narrowing the gap between data collected for USACE Levee Safety Program activities and data needed for accreditation of levees for the NFIP has potential to be mutually beneficial to all organizations involved (FEMA, USACE, local sponsor) as there is opportunity to support both the USACE risk-informed program focus on life safety while providing information FEMA would need to make NFIP accreditation decisions.

The Task Force's final report is due to Congress on July 6, 2013. The final report of the Flood Protection Structure Accreditation Task Force will fully consider and integrate input from stakeholders and the National

Committee on Levee Safety. The Task Force will formally terminate upon delivery of the final report to Congress, but USACE and FEMA will continue to work to adjust and refine activities to ensure effective implementation.

Recommendations from the Task Force may include both long-term and short-term policy and process changes for USACE and FEMA. Because both agencies have defined processes for establishing new policies or revising existing policies, some policy changes may take longer than one year to fully implement

Figure 3 illustrates the overall approach and schedule the Task Force has adopted.

Appendix A: Legislative Language Establishing the Flood Protection Structure Accreditation Task Force

This document responds to language set forth in P.L. 112-141, the Moving Ahead for Progress in the 21st Century Act (MAP-21). The Act provides recommendations for cooperative efforts between the Federal Emergency Management Agency (FEMA) and the U.S. Army Corps of Engineers (Corps), as follows:

SEC. 100226. FLOOD PROTECTION STRUCTURE ACCREDITATION TASK FORCE.

(a) **DEFINITIONS.**

- (1) the term “flood protection structure accreditation requirements” means the requirements established under section 65.10 of title 44, Code of Federal Regulations, for levee systems to be recognized on maps created for purposes of the National Flood Insurance Program;
- (2) the term “National Committee on Levee Safety” means the Committee on Levee Safety established under section 9003 of the National Levee Safety Act of 2007 (33 U.S.C. 3302); and
- (3) the term “task force” means the Flood Protection Structure Accreditation Task Force established under subsection (b).

(b) **ESTABLISHMENT.**

(1) **IN GENERAL.** The Administrator and the Secretary of the Army, acting through the Chief of Engineers, in cooperation with the National Committee on Levee Safety, shall jointly establish a Flood Protection Structure Accreditation Task Force.

(2) **DUTIES.**

(A) **DEVELOPING PROCESS.** The task force shall develop a process to better align the information and data collected by or for the Corps of Engineers under the Inspection of Completed Works Program with the flood protection structure accreditation requirements so that—

- (i) information and data collected for either purpose can be used interchangeably; and
- (ii) information and data collected by or for the Corps of Engineers under the Inspection of Completed Works Program is sufficient to satisfy the flood protection structure accreditation requirements.

(B) **GATHERING RECOMMENDATIONS.** The task force shall gather, and consider in the process

developed under subparagraph (A), recommendations from interested persons in each region relating to the information, data, and accreditation requirements described in subparagraph (A).

(3) **CONSIDERATIONS.** In developing the process under paragraph (2), the task force shall consider changes to—

- (A) the information and data collected by or for the Corps of Engineers under the Inspection of Completed Works Program; and
- (B) the flood protection structure accreditation requirements.

(4) **RULE OF CONSTRUCTION.** Nothing in this section shall be construed to require a reduction in the level of public safety and flood control provided by accredited levees, as determined by the Administrator for purposes of this section.

(c) **IMPLEMENTATION.** The Administrator and the Secretary of the Army, acting through the Chief of Engineers, shall implement the process developed by the task force under subsection (b) not later than 1 year after the date of enactment of this Act and shall complete the process under subsection (b) not later than 2 years after the date of enactment of this Act.

(d) **REPORTS.** The Administrator and the Secretary of the Army, acting through the Chief of Engineers, in cooperation with the National Committee on Levee Safety, shall jointly submit to the Committee on Banking, Housing, and Urban Affairs and the Committee on Environment and Public Works of the Senate and the Committee on Financial Services, the Committee on Transportation and Infrastructure, and the Committee on Natural Resources of the House of Representatives reports concerning the activities of the task force and the implementation of the process developed by the task force under subsection (b), including—

- (1) an interim report, not later than 180 days after the date of enactment of this Act; and
- (2) a final report, not later than 1 year after the date of enactment of this Act.

(e) **TERMINATION.** The task force shall terminate on the date of submission of the report under subsection (d)(2).

In response to paragraph (d)(2) of the legislative language, this report is the task force’s interim report.

Appendix B: Sources of Stakeholder Input

Stakeholders with an interest in levee accreditation for the NFIP and levee safety, including communities, levee and flood control boards, engineering firms that certify the data to be submitted as part of the accreditation package, and the associations and members of Congress that represent those groups, have encouraged USACE and FEMA to share available data related to levees.

To better understand areas where stakeholder feedback is consistent or divergent and to collect and consider recommendations made to date, the Task Force examined letters from members of Congress to FEMA and USACE on flood mapping efforts and issues related to levee accreditation for the NFIP. Stakeholder involvement efforts related to levees and the NFIP from the National Committee on Levee Safety, the Federal Interagency Floodplain Management Task Force, and USACE's development of a levee safety engineer circular were also examined.

A SAMPLING OF LETTERS FROM CONGRESS REPRESENTING CONCERNS OF CONSTITUENT COMMUNITIES

- Letter from Rep. Devin Nunes (CA-21) to Rep. Don Young (Transportation Committee Chair, AK-at large). December 8, 2005.
- Response Letter from FEMA to Rep. Richard Pombo (CA-11). September 1, 2006.
- Letter to LtGen Van Antwerp from Sen. Mary Landrieu (LA). April 10, 2008.
- Letter to President Obama from Rep. Rodney Alexander (LA-5). February 17, 2010.
- Letter to ASA(CW) Darcy from Sen. Max Baucus (MT). February 18, 2010.
- Letter to LtGen Van Antwerp and ASA(CW) Darcy from Rep. Denny Rehberg (MT-at large). March 2, 2010.
- Letter to ASA(CW) Darcy from Sen. Jon Tester (MT). March 4, 2010.
- Senate Appropriations Subcommittee On Energy And Water Development Questions for the Record (QFR) on FY2011 Budget. March 11, 2010.
- Letter from 16 Senators to Administrator Fugate and ASA(CW) Darcy. March 18, 2010.
- Letter to ASA(CW) Darcy from Sen. Max Baucus (MT) and Sen. Jon Tester (MT). March 19, 2010.
- Letter to BG McMahon, USACE Northwest Division Commander, from Sen. Max Baucus (MT) and Sen. Jon Tester (MT). March 19, 2010.
- Letter from 70 members of the House to Administrator Fugate and ASA(CW) Darcy. April 22, 2010.
- Letter from Sen. Charles Schumer (NY) to Administrator Fugate and LtGen Van Antwerp. August 24, 2010.
- Letter to Col. Leady, USACE Sacramento District, District Engineer from San Joaquin Area Flood Control Agency and San Joaquin County. December 22, 2010.
- Letter to ASA(CW) Darcy from Rep. Jerry McNerney (CA-11) and Rep. Dennis Cardoza (CA-18). January 3, 2011.
- FEMA Response to Rep. John Fleming (LA-4). February 23, 2011 (re: January 11, 2011 letter).
- FEMA response to Sen. Carl Levin (MI). March 17, 2011 (re: Feb 8, 2011 letter).
- Letter to Administrator Fugate from Sen. Charles Schumer (NY) and Rep. Maurice Hinchey (NY-22). March 23, 2011.
- Letter to ASA(CW) Darcy from Sen. Max Baucus (MT). April 4, 2011.
- Letter to Administrator Fugate from Rep. Stevan Pearce (NM-2). May 23, 2011.

FLOOD PROTECTION STRUCTURE ACCREDITATION TASK FORCE: INTERIM REPORT

- Letter to ASA(CW) Darcy from 22 members of Congress (representing river communities). November 21, 2011.
- House Appropriations Subcommittee On Energy And Water Development Questions for the Record (QFR) on FY2013 Budget. March 7, 2012.
- FEMA response to Sen. Max Baucus (MT) on constituent concern. June 4, 2012 (Baucus letter April 10, 2012 re Feb 3, 2011 letter).
- FEMA response to Rep Nick Rahall (WV-3) on constituent concern. June 4, 2012 (Rahall letter April 10, 2012).
- FEMA response to Sen. Mitch McConnell (KY) on constituent concern. August 17, 2012 (McConnell letter July 5, 2012).
- Letter to ASA(CW) Darcy and Administrator Fugate from Sen. Tim Johnson (SD) and Sen. Jon Tester (MT). August 27, 2012.

COMMENTS/CONCERNS FROM STAKEHOLDERS REFLECTED IN PREVIOUS REPORTS

- Recommendations for a National Levee Safety Program: A Report to Congress from the National Committee on Levee Safety (Draft). January 2009.
- FEMA-USACE-OMB Task Force Fiscal Year 2010 Report to Congress, First Quarter. November 18, 2010.
- FEMA and USACE Alignment of Requirements and Information for Levee Accreditation, Fiscal Year 2012 Report to Congress. October 2012.

COMMENTS/CONCERNS FROM PREVIOUS STAKEHOLDER INVOLVEMENT EFFORTS

- Federal Interagency Floodplain Management Task Force (FIFM-TF) Listening Session: Summary Report. May 10th -11th, 2010.
- U.S. Army Corps of Engineers development of an Engineer Circular on the USACE Levee Safety Program. May – June, 2011.
- Summary of Feedback: Recommendations for a National Levee Safety Program. (National Committee on Levee Safety). August 12, 2011.

Appendix C: Mapping of Areas Protected by Levee Systems (44 CFR 65.10)

Requirements for accreditation of levees (and other flood protection structures) for the National Flood Insurance Program are defined in the Code of Federal Regulations, Title 44 (Emergency Management and Assistance), Part 65 (Identification and Mapping of Special Hazard Areas), Section 65.10 (Mapping of Areas Protected by Levee Systems.) The section, as published in the Federal Register on August 25, 1986, reads:

(a) **GENERAL.** For purposes of the NFIP, FEMA will only recognize in its flood hazard and risk mapping effort those levee systems that meet, and continue to meet, minimum design, operation, and maintenance standards that are consistent with the level of protection sought through the comprehensive flood plain management criteria established by § 60.3 of this subchapter. Accordingly, this section describes the types of information FEMA needs to recognize, on NFIP maps, that a levee system provides protection from the base flood. This information must be supplied to FEMA by the community or other party seeking recognition of such a levee system at the time a flood risk study or restudy is conducted, when a map revision under the provisions of part 65 of this subchapter is sought based on a levee system, and upon request by the Administrator during the review of previously recognized structures. The FEMA review will be for the sole purpose of establishing appropriate risk zone determinations for NFIP maps and shall not constitute a determination by FEMA as to how a structure or system will perform in a flood event.

(b) **DESIGN CRITERIA.** For levees to be recognized by FEMA, evidence that adequate design and operation and maintenance systems are in place to provide reasonable assurance that protection from the base flood exists must be provided. The following requirements must be met:

(1) **Freeboard.**

(i) Riverine levees must provide a minimum freeboard of three feet above the water-surface level of the base flood. An additional one foot above the minimum is required within 100 feet in either side of structures (such as bridges) riverward of the levee or wherever the flow is constricted. An additional one-half foot above the minimum at the upstream end of the levee, tapering to not less than the minimum at the downstream end of the levee, is also required.

(ii) Occasionally, exceptions to the minimum riverine freeboard requirement described in paragraph (b) (1)(i) of this section, may be approved. Appropriate engineering analyses demonstrating adequate protection with a lesser freeboard must be submitted to support a request for such an exception. The material presented must evaluate the uncertainty in the estimated base flood elevation profile and include, but not necessarily be limited to an assessment of statistical confidence limits of the 100-year discharge; changes in stage-discharge relationships; and the sources, potential, and magnitude of debris, sediment, and ice accumulation. It must be also shown that the levee will remain structurally stable during the base flood when such additional loading considerations are imposed. Under no circumstances will freeboard of less than two feet be accepted.

(iii) For coastal levees, the freeboard must be established at one foot above the height of the one percent wave or the maximum wave runup (whichever is greater) associated with the 100-year stillwater surge elevation at the site.

(iv) Occasionally, exceptions to the minimum coastal levee freeboard requirement described in paragraph (b) (1)(iii) of this section, may be approved. Appropriate engineering analyses demonstrating adequate protection with a lesser freeboard must be submitted to support a request for such an exception. The material presented must evaluate the uncertainty in the estimated base flood loading conditions. Particular emphasis must be placed on the effects of wave attack and overtopping on the stability of the levee. Under no circumstances, however, will a freeboard of less than two feet above the 100-year stillwater surge elevation be accepted.

(2) **Closures.** All openings must be provided with closure devices that are structural parts of the system during operation and design according to sound engineering practice.

(3) **Embankment protection.** Engineering analyses must be submitted that demonstrate that no appreciable erosion of the levee embankment can be expected during the

base flood, as a result of either currents or waves, and that anticipated erosion will not result in failure of the levee embankment or foundation directly or indirectly through reduction of the seepage path and subsequent instability. The factors to be addressed in such analyses include, but are not limited to: Expected flow velocities (especially in constricted areas); expected wind and wave action; ice loading; impact of debris; slope protection techniques; duration of flooding at various stages and velocities; embankment and foundation materials; levee alignment, bends, and transitions; and levee side slopes.

(4) **Embankment and foundation stability.** Engineering analyses that evaluate levee embankment stability must be submitted. The analyses provided shall evaluate expected seepage during loading conditions associated with the base flood and shall demonstrate that seepage into or through the levee foundation and embankment will not jeopardize embankment or foundation stability. An alternative analysis demonstrating that the levee is designed and constructed for stability against loading conditions for Case IV as defined in the U.S. Army Corps of Engineers (COE) manual, “Design and Construction of Levees” (EM 1110-2-1913, Chapter 6, Section II), may be used. The factors that shall be addressed in the analyses include: Depth of flooding, duration of flooding, embankment geometry and length of seepage path at critical locations, embankment and foundation materials, embankment compaction, penetrations, other design factors affecting seepage (such as drainage layers), and other design factors affecting embankment and foundation stability (such as berms).

(5) **Settlement.** Engineering analyses must be submitted that assess the potential and magnitude of future losses of freeboard as a result of levee settlement and demonstrate that freeboard will be maintained within the minimum standards set forth in paragraph (b)(1) of this section. This analysis must address embankment loads, compressibility of embankment soils, compressibility of foundation soils, age of the levee system, and construction compaction methods. In addition, detailed settlement analysis using procedures such as those described in the COE manual, “Soil Mechanics Design—Settlement Analysis” (EM 1100-2-1904) must be submitted.

(6) **Interior drainage.** An analysis must be submitted that identifies the source(s) of such flooding, the extent of the flooded area, and, if the average depth is greater than one foot, the water-surface elevation(s) of the base flood. This analysis must be based on the joint probability of interior and exterior flooding and the capacity of facilities (such as drainage lines and pumps) for evacuating interior floodwaters.

(7) **Other design criteria.** In unique situations, such as those where the levee system has relatively high vulnerability, FEMA may require that other design criteria and analyses be submitted to show that the levees provide adequate protection. In such situations, sound engineering practice will be the standard on which FEMA will base its determinations. FEMA will also provide the rationale for requiring this additional information.

(c) **OPERATION PLANS AND CRITERIA.** For a levee system to be recognized, the operational criteria must be as described below. All closure devices or mechanical systems for internal drainage, whether manual or automatic, must be operated in accordance with an officially adopted operation manual, a copy of which must be provided to FEMA by the operator when levee or drainage system recognition is being sought or when the manual for a previously recognized system is revised in any manner. All operations must be under the jurisdiction of a Federal or State agency, an agency created by Federal or State law, or an agency of a community participating in the NFIP.

(1) **Closures.** Operation plans for closures must include the following:

- (i) Documentation of the flood warning system, under the jurisdiction of Federal, State, or community officials, that will be used to trigger emergency operation activities and demonstration that sufficient flood warning time exists for the completed operation of all closure structures, including necessary sealing, before floodwaters reach the base of the closure.
- (ii) A formal plan of operation including specific actions and assignments of responsibility by individual name or title.

(iii) Provisions for periodic operation, at not less than one-year intervals, of the closure structure for testing and training purposes.

(2) **Interior drainage systems.** Interior drainage systems associated with levee systems usually include storage areas, gravity outlets, pumping stations, or a combination thereof. These drainage systems will be recognized by FEMA on NFIP maps for flood protection purposes only if the following minimum criteria are included in the operation plan:

(i) Documentation of the flood warning system, under the jurisdiction of Federal, State, or community officials, that will be used to trigger emergency operation activities and demonstration that sufficient flood warning time exists to permit activation of mechanized portions of the drainage system.

(ii) A formal plan of operation including specific actions and assignments of responsibility by individual name or title.

(iii) Provision for manual backup for the activation of automatic systems.

(iv) Provisions for periodic inspection of interior drainage systems and periodic operation of any mechanized portions for testing and training purposes. No more than one year shall elapse between either the inspections or the operations.

(3) Other operation plans and criteria. Other operating plans and criteria may be required by FEMA to ensure that adequate protection is provided in specific situations. In such cases, sound emergency management practice will be the standard upon which FEMA determinations will be based.

(d) **MAINTENANCE PLANS AND CRITERIA.** For levee systems to be recognized as providing protection from the base flood, the maintenance criteria must be as described herein. Levee systems must be maintained in accordance with an officially adopted maintenance plan, and a copy of this plan must be provided to FEMA by the owner of the levee system when recognition is being sought or when the plan for a previously recognized system is revised in any manner. All maintenance activities must be under the jurisdiction of a Federal or State agency, an agency created by Federal or State law, or an agency of a community participating in the NFIP that must assume ultimate responsibility for maintenance. This plan must document the formal procedure that ensures that the stability, height, and overall integrity of the levee and its associated structures and systems are maintained. At a minimum, maintenance plans shall specify the maintenance activities to be performed, the frequency of their performance, and the person by name or title responsible for their performance.

(e) **CERTIFICATION REQUIREMENTS.** Data submitted to support that a given levee system complies with the structural requirements set forth in paragraphs (b)(1) through (7) of this section must be certified by a registered professional engineer. Also, certified as-built plans of the levee must be submitted. Certifications are subject to the definition given at § 65.2 of this subchapter. In lieu of these structural requirements, a Federal agency with responsibility for levee design may certify that the levee has been adequately designed and constructed to provide protection against the base flood.

Appendix D: Glossary

Terms defined below are for the purposes of this document. In some cases, FEMA and the USACE have different definitions used in regulation or guidance.

100-YEAR FLOOD: The median peak flood discharge having a 1% annual chance exceedance (ACE) expressed as a return period.

BASE FLOOD: A FEMA term defined in the National Flood Insurance Program (44 CFR 59.1) means a flood having a 1 percent chance of being equaled or exceeded in any given year. For the purposes of this report the base flood is also referred to as the 1 percent annual chance of exceedance or 1% ACE or 100-year flood.

BREACH: The formation of a gap in the levee system through which water may flow uncontrolled onto the adjacent floodplain. A breach in the levee system may occur prior to or subsequent to overtopping.

INSPECTION OF COMPLETED WORKS (ICW): The overarching program under which USACE undertakes inspections of completed federal projects to determine whether the non-federal sponsor complying with project agreements. Some USACE Levee Safety Program activities are covered under the ICW program.

LEEVE: Man-made structure, usually an earthen embankment or concrete floodwall, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide reasonable assurance of excluding temporary flooding from the leveed area.

LEEVE ACCREDITATION: FEMA has verified that all documentation to demonstrate that a levee system meets 44 CFR 65.10 requirements has been submitted and has mapped the appropriate flood hazard zones for the leveed area on the Flood Insurance Rate Map.

LEEVE CERTIFICATION: A technical finding that there is reasonable assurance (not absolute guarantee) that a levee system (not a segment or a project) will exclude the 1% annual chance exceedance event (or base flood) from the leveed area based on the condition of the system at the time the determination is made. As part of this evaluation, design, construction, maintenance, and other information are considered. The certification finding must be accomplished by either a registered professional engineer or a Federal agency with levee design and construction qualifications such as USACE. See also: Levee System Evaluation Determination

LEEVE SEGMENT: USACE recognizes a levee segment as a discrete portion of a levee system that is operated and maintained by a single entity.

LEEVE SYSTEM: One or more levee segments and other features such as floodwalls and pump stations, which are interconnected and necessary to ensure exclusion of the design flood from the associated leveed area.

LEEVE SYSTEM EVALUATION DETERMINATION: The technical finding by the U.S. Army Corps of Engineers, defined in Engineer Circular 1110-2-6067, that, for the floodplain in question, there is a reasonable assurance that the levee system will exclude the 1% annual chance exceedance flood (or base flood) from the leveed area based on the condition of the system at the time the determination is made.

LEEVED AREA: The lands from which flood water is excluded by the levee system.

OVERTOPPING: A condition that occurs when the elevation of the still-water level and/or associated waves, wind setup, or surge exceeds the top of the levee system.

PERIODIC INSPECTION: A USACE levee inspection conducted by a multidisciplinary team that includes the levee sponsor and is led by a professional engineer. Components include evaluating routine inspection items, verifying proper operation and maintenance, evaluating operational adequacy and structural stability, and comparing current design and construction criteria with those in place when the levee was built.

SCREENING: A quantitative and qualitative assessment of the general condition and relative risks associated with individual levee segments to identify the inundation risk among the levee systems. Screenings rely on readily available information including routine inspection data and other available information. The screening process is used to evaluate the levee systems in the USACE portfolio.

RISK ASSESSMENT: Risk assessment is a systematic, evidence-based approach for estimating and describing the likelihood and consequences of current and future without action risk; and risk reduced by any proposed risk reduction or management action.

ROUTINE INSPECTION: A USACE visual inspection, typically performed annually, conducted by USACE that verifies proper levee system operation and maintenance.

Appendix E: List of Acronyms Used

ACE	Annual Chance of Exceedance
CFR	Code of Federal Regulations
FEMA	Federal Emergency Management Agency
ICW	Inspection of Completed Works
Levee12 TF	FEMA/USACE Fiscal Year 2012 Task Force
MAP-12	Moving Ahead for Progress in the 21st Century Act
MLI	Mid-Term Levee Inventory
NCLS	National Committee on Levee Safety
NFIP	National Flood Insurance Program
NLD	National Levee Database
P.L.	Public Law
USACE	U.S. Army Corps of Engineers